NA Values in R

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I read an excellent post on R-Bloggers about understanding NA values in R. I'm just going to expand upon it slightly and summarize is a bit. The original article can be found [here](https://www.r-bloggers.com/the-trick-to-understanding-nas-missing-values-in-r/)

## NA Values as Numbers

NA^0

## [1] 1

NA^2

## [1] NA

0^0

## [1] 1

0^2

## [1] 0

Any positive or negative number raised to the 0 equals 1. Even 0 raised to the 0 equals 1. So NA can be thought of as a placeholder for some integer that we do not know. If you look in the example, NA^2 = NA because the value of (placeholder)^2 varies depending on what the placeholder is, but (placeholder)^0 = 1 regardless of what is in there.

## NA Values as Logical Statements

FALSE || TRUE

## [1] TRUE

FALSE & TRUE

## [1] FALSE

"||" = or  
"&" = and

* FALSE || True = True: Only one statement needs to be for the result to be true
* FALSE & TRUE = FALSE: Both statements need to be true for the result to be true

NA || TRUE

## [1] TRUE

NA || FALSE

## [1] NA

NA & TRUE

## [1] NA

NA & FALSE

## [1] FALSE

Remember that NA is a placeholder. It could equal any of the possible outcomes (TRUE and FALSE). So each statement has to work out for both possibilities.

* NA || TRUE = TRUE: Only one statement needs to be true and that is already satisfied
* NA || FALSE = NA: The result changes based on the value of NA. TRUE produces a true result and False produces a false result
* NA & TRUE = NA: The result changes based on the value of NA. TRUE produces a true result and False produces a false result
* NA & FALSE = FALSE: FALSE & FALSE = FALSE and TRUE & FALSE = FALSE. The same result is produced regardless of the value of NA.